

In re Application of:  
Frudakis and Shriver  
Application No.: 10/644,594  
Filed: August 19, 2003  
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PATENT  
Attorney Docket No.: DNA1170-2

## REMARKS

Claims 1, 3-9, 12, 15, 16, 21, 22, 24, 29-32, 37-45, 47-59, 61, 72 and 76 are pending in the application and are subject to restriction and/or election requirement according to the following Groups:

**Group I.** Claims 1, 3-9, 12, 15-16, 21, 22, 24, 29-32, 37-45, and 47-58 drawn to a method of inferring a trait of an individual and estimating proportional ancestry, classified in class 435, subclass 6;

**Group II.** Claims 59 and 61, drawn to an article of manufacture, classified in class 238, subclass 77; and

**Group III.** Claims 72 and 76, drawn to a kit comprising hybridizing oligonucleotides, classified in class 536, subclass 24.3.

In addition, the Examiner has asked for a species election for initial search and examination of generic claims 1, 7, 12, 24, 29-32, 38-45, 47-59, and 61:

**Species A:** elect a single ancestry information marker from SEQ ID NOs: 1-331 cited in claims 4-5, 37 and 72; and

**Species B:** elect one trait from among those recited, for example, in claims 3 and 12, 15-16, and 21-22.

In order to be fully responsive to the Restriction Requirement, Applicants provisionally elect **Group I**, claims 1, 3-9, 12, 15-16, 21, 22, 24, 29-32, 37-45, and 47-58 drawn to a method of inferring a trait of an individual and estimating proportional ancestry, with traverse.

In order to be fully responsive to the Species Election Requirement, Applicants provisionally elect the ancestry information marker 2071/SEQ ID NO: 70 for **Species A**, with traverse; and the trait of biogeographical ancestry (BGA) as recited in claim 3, for **Species B**, with traverse.

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MPEP 803 states that "[i]f the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent and distinct inventions."

With respect to the Group I/Group II restriction, Applicants submit that independent claim 59 (Group II) is directed to "at least one photograph of a person having a known proportional ancestry corresponding to a population structure comprising nucleotide occurrences of AIMs indicative of biogeographical ancestry (BGA)" and that this exact same limitation is recited verbatim in Claim 58 of Group I. Applicant submit that the search and examination of the claims of Groups I and II, particularly claims 58 and 59, would necessarily encompass the same subject matter and therefore would not impose a serious burden on the Examiner.

Accordingly, reconsideration and withdrawal of the requirement for restriction between Groups I and II is respectfully requested.

With respect to the methods of Group I and the kits of Group III, Applicants submit that a search of the methods of Group I, which encompass sequences including SEQ ID NOs: 1-331, will necessarily overlap, if not be entirely coextensive with kits comprising the same sequences such that all claims of the invention should be examined together. Applicants submit that a concurrent examination of the claims of Group I and Group III would not impose a serious burden on the Examiner.

Accordingly, reconsideration and withdrawal of the requirement for restriction between Groups I and III is respectfully requested.

With respect to the election of an ancestry information marker species of Group A, applicants submit that the individual markers are derived from a limited number of genes, such that multiple markers are found within a single gene. According to patent office guidance, it is only "[n]ucleotide sequences encoding different proteins [that] are structurally distinct chemical compounds" that are considered to be "unrelated to one another." MPEP 2434. It is therefore,

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sequences from *different genes* that are “deemed to normally constitute independent and distinct inventions within the meaning of 35 U.S.C. 121.” *Id.* Thus, Applicants submit that all of the individual markers from a single gene should be considered as a single sequence, according to the MPEP, and therefore examined together.

Furthermore, MPEP 2434 states that 10 independent sequences “will be examined in a single application without restriction.” Accordingly Applicants submit that all of the markers from a total of 10 different genes should be examined in the same application and that according to Patent Office guidance, this would not impose an undue burden.

Accordingly, reconsideration and withdrawal or modification of the Groups A species election requirement is respectfully requested.

With respect to the election of a trait of Group B, applicants submit that the individual traits are related to each other as, for example, the markers for ancestry information (AIMs) have inferential value to each of the traits. Applicants submit that given the common utility and structural features of the AIMS, and the interrelationship of the methods of determining traits using AIMS, a search of one trait would, by necessity, include a search of art relevant to the other traits. Therefore, Applicants submit that simultaneous examination of all species will likely result in a more efficient and comprehensive examination than would subsequent duplicative searches when the “generic” claims are found patentable. Applicants further submit that such a search would not place an undue burden on the Examiner.

Accordingly, reconsideration and withdrawal of the Group B species election requirement is respectfully requested.

Moreover, Applicants submit that the generic claims are patentable and accordingly reserve the right to examination and consideration of all non-elected species of Groups A and B when the generic claims are found free of prior art.

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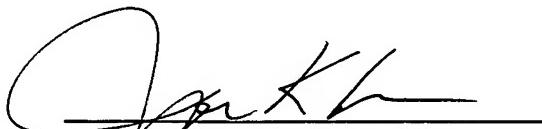
**II. REMARKS**

Applicants submit that the pending claims are in condition for allowance, and a notice to that effect is respectfully requested.

Applicants have enclosed a check in the amount of \$60.00 for the additional one-month extension fee associated with this submission. Applicants do not believe any other fees are due in connection with this submission, however if any other fees are due, please charge any fees, or make any credits, to Deposit Account No. 07-1896.

The Examiner is invited to contact Applicant's undersigned representative if there are any questions relating to this application or if the prosecution of the application can be assisted thereby.

Respectfully submitted,



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